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Monsanto Chemical Company 500 Monsanto Ave. Sauget, Illinois 62206-1198 Phone: (618) 271-5835

**Monsanto** 

April 28, 1988

LIG3020005 Sillar Sauget Siter - Sauget Superfund - Technical

L1631210006-St.Ca Minisanto Rt 3 Site Jan. Superjural - Technical

Mr. Bharat Mathur, Deputy Manager Division of Land Pollution Control Illinois Environmental Protection Agency 2200 Churchill Road Springfield, Illinois 62706

Mr. George E. Addison Remedial Projects Director USEPA, Region V 230 South Dearborn Street Chicago, Illinois 60604

Gentlemen:

Attached are geologic logs, construction details, and location maps for the new wells installed at the W. G. Krummrich landfill and Route 3 Drumsite for your information.

Sincerely,

Max W. McCombs

General Superintendent

Mia I M. Simber

Government & Environmental Affairs

/bjj Attachments

BORING/WELL: GM-54A PROJECT	NO: NO308SG3	PAGE: 1
SITE Monsanto Company LOCATION: Sauget, Illinois	DRILLING STARTED: 10/6/87	DRILLING COMPLETED: 10/6/87
TOTAL DEPTH HOLE DRILLED: 39 ft DIAMETER: 8 in	TYPE OF S CORING DE	SAMPIE/ Split Spoon EVICE: Core Barrel
	SAMPLING INTERVAL: 5 ft	
LAND-SURFACE ( ) ELEVATION: ( )	SURVEYED ESTIMATED DATUM:	
DRILLING FLUID USED: None	DRILLING METHO	D: Auger (4-1/4" I.D.)
DRILLING CONTRACTOR: John Mathes & Assoc.	DRILLER: Kent	HELPER: Quentin
PREPARED BY: B. Blum HAMME	R WEIGHT: 140 lb	HAMMER DROP: 30 in.

SAMPLE NO	SAMPLE DEPIH		CORE RECVRY	BLOW	SAMPLE/CORE DESCRIPTION
	FROM	OT	1		
	5	7	1.5	2-2-	Silt, brown, dry.
				1-2	
	10	12	1.5	2-4-	Silt, brown (10.0'-10.5') grading into a fine sand,
				3-4	light brown with 20-25 percent silt. Dry.
	15	17	2.0	1-3-	Sand, fine, gray-brown (15'-16') silt, brown
				6-6	(16'-16.3') grading into a fine sand with 20-25
					percent silt (16.3'-17'), wet.
					Note: "A-rods" show wet line at ~12'.
	20	22	2.0	6-9-	Sand, fine, gray-brown with 10-15 percent silt
				15-26	grading into a fine sand, brown with 20-25 percent
					silt (21'-22'), wet. Wood cuttings are coming
					up from auger flytes.
*	25	27	0.5	2-2-	Sand, medium to coarse, brown with assorted colors,
				3-3	wet.
	30	32	2.0	1-2-	Same as above.
				2-6	
	35	37	2.0	3-4	Sand, medium, light brown to gray.
				6-8	
*					Second attempt: first core barrel at this depth was
					empty - however, blow counts are from first
					attempted sample.
					L



4" Dia. protective sleeve LAND SURFACE 8 inch diameter drilled hole Well casing, \_\_2\_\_inch diameter, \_\_Stee1 ☐ Backfill Di Grout \_ <u>13</u> ft\* Bentonite ☑ slurry ☐ pellets 16 ft\* <u>18.5</u>4. -Well Screen. 2 inch diameter Stainless 10 slot Steel ✓ Gravei Pack -□ Sand Pack ☐ Formation Collapse

Measuring Point is Top of Well Casing Unless Otherwise Noted.

<u>38.5</u> ft\*

\_\_ ft\*

40

\*Depth Below Land Surface

Project Monsanto/N0808SG3	_Well_	GM-54A
Town/City Sauget		
County St. Clair	_State_	Illinois
Permit No		
Land-Surface Elevation		
and Datum feet	□ surv	eyed
	□ estin	nated
Installation Dates(s) 10/6/87		
Drilling Method Hollow Stem Auger		
Drilling Contractor John Mathes & Asso		s, inc.
Drilling FluidNone		
Development Techniques(s) and Date(s)		
Surging with compressed air		
10/13/87		
Fluid Loss During Drilling ~ 50		gallons
<u> </u>		<del>-</del>
Water Removed During Development1		gallons
<u> </u>	00	
Water Removed During Development1	00	feet below M.P.
Water Removed During Development1 Static Depth to Water15	00	feet below M.P.
Water Removed During Development1  Static Depth to Water15  Pumping Depth to Water	00	feet below M.P.
Water Removed During Development1  Static Depth to Water15  Pumping Depth to Water hours	00	feet below M.P.
Water Removed During Development1  Static Depth to Water15  Pumping Depth to Water hours  Yield1-2 gpm	00 n/ft	feet below M.P feet below M.P. Date
Water Removed During Development1  Static Depth to Water15  Pumping Depth to Waterhours  Yield	00 n√ft ing in	feet below M.P feet below M.P. Date
Water Removed During Development1  Static Depth to Water15  Pumping Depth to Water	00 n√ft ing in	feet below M.P feet below M.P. Date
Water Removed During Development1  Static Depth to Water15  Pumping Depth to Water	00 n√ft ing in	feet below M.P feet below M.P. Date
Water Removed During Development1  Static Depth to Water	00 n√ft ing in	feet below M.P feet below M.P. Date
Water Removed During Development1  Static Depth to Water	00 n√ft ing in	feet below M.P feet below M.P. Date
Water Removed During Development1  Static Depth to Water	00 n√ft ing in	feet below M.P feet below M.P. Date
Water Removed During Development1  Static Depth to Water	00 n√ft ing in	feet below M.P feet below M.P. Date
Water Removed During Development1  Static Depth to Water	00 n√ft ing in	feet below M.P feet below M.P. Date
Water Removed During Development1  Static Depth to Water	00 n√ft ing in	feet below M.P feet below M.P. Date

BORING/WELL: GM-54B	PROJECT NO	): NO308S	G3	PAGE:	1	
SITE Monsanto Compan LOCATION: Sauget, Illinoi	y I	RILLING TARIED:	9/28/87	DRILLIN COMPLET	G ED: 9/29/8	37
TOTAL DEPTH HOLE DRILLED: 93 ft DIAME	TER: 8 in.		TYPE OF SACORING DEV	MPLE/	Flume or S Spoon Core	Split Barrel
LENGIH & DIAMETER OF CORING DEVICE: 2' x 2"		MPLING TERVAL:	10 ft			
LAND-SURFACE ELEVATION:	{ } £	URVEYED STIMATED	DATUM:			
DRILLING FLUID USED: Bent	conite & Wat	er DRILL	ING METHOD:	Hydrau	lic (mud)	Rotary
DRILLING CONTRACTOR: John Mathes &	ASSOC. DE	— HILLER: C	hris Hebel	HELPE	R: Dave E	llis
DDFDADFD RV. B. Blim	HAMMER	WETGHT:	140 lb HZ	AMMER DR	OP: 30 in	•

SAMPLE NO	SAMPLE DEPIH		CORE RECVRY	BLOW COUNTS	SAMPLE/CORE DESCRIPTION
	FROM	OT			
9/28	0	10		Flume	No sample collected.
	10	20		Flume	Silt, and sand, fine; brown.
	20	30		Flume	
	30	40		Flume	
	Sample	$\infty$ llec	ted		
	40	50		Flume	Sand, fine to medium (75%) brown; silt (25%)
					coarsening downwards to sand, medium to coarse.
9/29	50	60		Flume	Sand, fine to coarse (85%) silt (15%) brown; with a
					lot of lignite.
	60	70		Flume	At 65' wood chips were coming out of flume. Material
					is same as above with wood.
	70	80	_	Flume	At 72' hit same kind of obstruction (wood) through it
					at 75'. Material is same as above.
	80	90			Same as above.
	87	89	2	Split	Sand, medium to coarse, gray; well sorted. Only 6"
				Spoon	of recovery was virgin formation. The other 18"
					was backwash.
	90	93		Flume	Same as above.
-			-		
		-			



6" Dia. protective		
sleeve	Project Monsanto/N0308SG3	WellGM-54B
LAND SURFACE	Town/City Sauget	
H H	County St. Clair	StateState
8 inch diameter	Permit No.	
drilled hole	Land-Surface Elevation	
M M	and Datum feet	□ surveyed
Well casing,  4 inch diameter,		□ estimated
Steel	Installation Dates(s) 9/29/87 - 9/30	/87
Backfill	Drilling Method Hydraulic (mud)	Rotary
☐ Grout	Drilling Contractor John Mathes &	Associates Inc.
á Kl	Drilling Fluid Polymer Free Benton	ite and Hydrant Water
50 ft		
Bentonite ☐ slurry	Development Techniques(s) and Date(s)	
53 ft XX pellets	Surging with compressed ai	r
	10/13/87	
66.5 tt*	Fluid Loss During Drilling ~ 500	gallons
	Water Removed During Development	_
Well Screen.  4 inch diameter	Static Depth to Water 15	feet below M.P.
Stainless 20 slot	Pumping Depth to Water	feet below M.P.
Steel	Pumping Duration hour	rs ·
☐ Gravel Pack 12 bags ☐ Sand Pack	Yield >10 gpm	Date
□ Sand Pack □ Formation	Specific Capacity	<del>-</del> '
Collapse	Well Purpose Ground water monito	ring in the "intermediate
86.5 m·	zone.	
<u>93</u> ft*	Remarks Relatively high yielding	ng well
Measuring Point is Top of		
Well Casing Unless Otherwise Noted.		
*Depth Below Land Surface		
Lanu Sunace	1	n

BORING/WELL: GM-55C PROJECT NO: NO896WG1	PAGE: 1 of 2
SITE Kirkland & Ellis DRILLING LOCATION: Sauget, Illinois STARTED: 9/	DRILLING 30/87 COMPLETED: 10/1/87
TOTAL DEPTH HOLE TOTAL DEPTH HOLE TOTAL DEPTH DIAMETER: 8 in.	YPE OF SAMPLE/ Flume or Split ORING DEVICE: Spoon Core Barrel
LENGIH & DIAMETER SAMPLING OF CORING DEVICE: 2' x 2" INTERVAL:	10 ft
LAND-SURFACE { } SURVEYED ELEVATION: { } ESTIMATED	DATUM:
DRILLING FIUID USED: Bentonite & Water DRILLIN	G METHOD: Hydraulic (mud) Rotary
DRILLING CONTRACTOR: John Mathes & Assoc. DRILLER: Chr	is Hebel HELPER: Dave Ellis
PREPARED BY: B. Blum HAMMER WEIGHT: 14	0 lb HAMMER DROP: 30 in.

SAMPLE NO	SAMPLE C DEPTH RE		CORE RECVRY	BLOW COUNTS	SAMPLE/CORE DESCRIPTION
	FROM	OT	]		
9/30	0	10		Flume	No sample - Silt and clay gray-black. Too fine to
					to fall out of suspension of mud.
	10	20		Flume	Silt and clay, gray-black.
	20	30		Flume	Same as above with some wood. Driller describes
					formation drilling like "smooth clay."
	30	40		Flume	Same as above.
	40	50		Flume	Same as above grading into sand, fine. Rods
		_			started bouncing at about 49'.
	50	60		Flume	Same as above (fine sand). The sand is not falling
					out of suspension due to thick drilling fluid.
	60	70		Flume	Same as above - start to notice lignite.
10/1	70	80		Flume	Same as above - coarsening with depth. Higher
					percentages of medium to coarse sand.
	80	90		Flume	At 83' driller thought he hit same wood or boulder.
					Material is the same as above. No wood seen in
					pit. Broken rock chips.
	90	100		Flume	Sand, medium to coarse with gravel.
	97	97	0.75	29-42	Sand, medium, gray with gravel.
				50/1"	
	100	110		Flume	Same as above - at 100' to 101' and 107' the rods
					were bouncing due to cobbles. Pieces of broken
					rock seen in flume sample. At 107' rods were
					bouncing and drilling was more difficult.
•					

## SAMPLE/CORE LOG (Cont.d)

BORING/WELL: GM-55C PREPARED BY: B. Blum

PAGE: 2 of 2

SAMPLE NO	SAM DEP	PLE IH	CORE RECVRY	BLOW COUNTS	SAMPLE/CORE DESCRIPTION
	FROM	TO			
10/1	100	110		Flume	Flume sample has a lot of angular material, coarse
(cont)					sand and gravel size. In addition, pods of silt
					are present. Most likely till.
	110	118		Flume	Same as above. Rods were jumping from 105' to 106'.
	118	119.5	1.5	76-90-	Sand, medium to coarse with gravel in a matrix of
				100	fine sand, silt, gray; most likely till.
	120	131		Flume	Same as above. Refusal.
	··-				
					-
			1		
			•		
	<del></del>				
	,				
		<u> </u>	<u> </u>		



	Project Kirkland & Ellis NO896WG1 Well GM-550	
LAND SURFACE	Town/City Sauget	
11	County St. Clair State Illino	vis
8 inch diameter	Permit No.	
drilled hole	Land-Surface Elevation	
114	and Datum feet	
Well casing,inch diameter,	estimated	
Steel	Installation Dates(s) 10/1, 10/2, 10/5/87	
Backfill	Drilling Method Hydraulic (mud) Rotary	
☐ Grout451	Drilling Contractor John Mathes & Associates Inc	
И	Drilling Fluid Polymer Free Bentonite and Hydrant	
90 ft	Drining Field	
Bentonite Slurry	Development Techniques(s) and Date(s)	
97 ft pellets	Surging with compressed air	
<u> 27</u> π	10/9 10/0/97	
	10/6, 10/5/6/	
111 ft*	Fluid Loss During Drilling ~ 500	
Well Screen.  4 inch diameter  Stainless 20 slot  Steel  3 Gravel Pack  Sand Pack  Formation  Collapse	Water Removed During Development ~1,000	-
Well Screen.  4 inch diameter	Static Depth to Water	t below M.P
Stainless 20 slot	Pumping Depth to Waterfee	t below M.P
Steel	Pumping Duration hours	
☑ Gravel Pack	Yield <10 gpm Date	
Sand Pack  Formation	Specific Capacitygpm/ft	
Collapse	Well Purpose Ground water monitoring in the "de	ep''
	zone.	
131 ft*		
131 ft*	Remarks	
anada a Balant -		
suring Point is Top of Casing Unless Otherwise		
ed.		
pth Below		

Prepared by \_

BORING/WELL: GM-56C	PROJECT NO: NO896	WG1 PAGE	: 1
SITE Kirkland & Elli LOCATION: Sauget, Illinoi	s DRILLING s STARTED:	10/5/87 DRII 00MP	LING LETED: 10/6/87
TOTAL DEPTH HOLE DRILLED: 121 FT DIAME	TER: 8 in.	TYPE OF SAMPLE CORING DEVICE:	/ Flume or Split Spoon Core Barrel
LENGTH & DIAMETER OF CORING DEVICE: 2' x 2"	SAMPLING INTERVAL:	10 ft	
LAND-SURFACE ELEVATION:	{ } SURVEYED { } ESTIMATE		
DRILLING FLUID USED: Bent	conite & Water DRIL	LING METHOD: Hyd	raulic (mud) Rotary
DRILLING CONTRACTOR: John Mathes &	ASSOC. DRILLER:	Chris Hebel HE	IPER: Dave Ellis
PREPARED BY: B. Blum	HAMMER WEIGHT:	140 lb HAMMER	DROP: 30 in.

SAMPLE NO	IPLE SAMPLE IO DEPTH F		CORE BLOW COUNTS		SAMPLE/CORE DESCRIPTION
	FROM	TO	1		
10/5	0	10		Flume	Clay and silt - gray grading into sand, fine, light
					brown.
-	10	20		Flume	Clay and silt, with sand, fine, gray and brown.
	20	30		Flume	Same as above. Trace sand is coarsening slightly.
	30	40		Flume	Same as above.
	40	50		Flume	Same as above to 45'. Sand 45-50'.
	50	60		Flume	Sand, medium, gray-brown; some coarse sand and
					gravel.
	60	70		Flume	Same as above with some pebbles too.
	70	80		Flume	Same as above. At 80' drilling through cobbles or
					boulders.
	80	90		Flume	Same as above. Hit cobbles at 83'.
	90	100		Flume	Same as above.
10/6	100	107		Flume	Same as above.
	108	109	1.0	Split	Clay, gray with sand, medium to coarse. (Coarse
				Spoon	material may be backwash).
				19-50-	
				100/4"	
	110	121			Sand, medium to coarse, with broken rock chips
					(from boulders or cobbles). Most likely till.
					Refusal.
		<del></del>	<u> </u>		<u></u>



6" Dia. protective		
sleeve sleeve	Project Kirkland & Ellis N0896WG	Well GM-56C
LAND SURFACE	Town/City Sauget	
	County St. Clair	_StateIllinois
8 inch diameter	Permit No.	_
drilled hole	Land-Surface Elevation	
Well casing,	and Datumfeet	□ surveyed
_4_ inch diameter,		☐ estimated
Steel	Installation Dates(s) 10/6, 10/7/87	
Backfill	Drilling Method Hydraulic (mud) F	Rotary
☑ Grout	Drilling Contractor <u>John Mathes &amp; As</u>	
	Drilling Fluid Polymer Free Bentonit	e and Hydrant Water
80 ft		
Bentonite	Development Techniques(s) and Date(s)	
83 ft · Dellets	Surging with compressed air	<del></del>
	10/13, 10/14/87	
91 ft*	Fluid Loss During Drilling ~ 500	_
Well Screen.  4 inch diameter  Stainless 20 slot  Steel  Gravel Pack 3 Bags  Sand Pack  Formation  Collapse	Water Removed During Development	_
4 inch diameter	Static Depth to Water36	
Stainless 20 slot	Pumping Depth to Water	feet below M.F
Gravel Pack 3 Bags	Pumping Duration hours  Yield gpm	Data
Sand Pack	j	Date
<b>☑</b> Formation	Specific Capacitygp Well Purpose Ground water monitori	
Collapse	zone.	ng m the deep
111 n·	Zone.	
121 ft*	Remarks	
	i igiridi ka	· · · · · · · · · · · · · · · · · · ·
Measuring Point is Top of		· · · · · · · · · · · · · · · · · · ·
Well Casing Unless Otherwise		
Noted.		
*Depth Below		
Land Surface		
	Prepared by Brian A. Blum	

BORING/WELL: GM-57C I	PROJECT NO: NO896WG1	PAGE: 1
STTE Kirkland & Ellis LOCATION: Sauget, Illinois	DRILLING STARTED: 10/7/87	DRILLING COMPLETED: 10/9/87
TOTAL DEPTH HOLE DRILLED: 116 FT DIAMETE	TYPE OF CORING 1	SAMPLE/ Flume or Split DEVICE: Spoon Core Barrel
LENGTH & DIAMETER OF CORING DEVICE: 2' x 2"	SAMPLING INTERVAL: 10 ft	
LAND-SURFACE ELEVATION:	SURVEYED ( ) ESTIMATED DATUM:	
DRILLING FLUID USED: Benton	nite & Water DRILLING METH	OD: Hydraulic (mud) Rotary
DRILLING CONTRACTOR: John Mathes & A	Assoc. DRILLER: Chris Heb	el HELPER: Dave Ellis
PREPARED BY: B. Blum	HAMMER WEIGHT: 140 lb	HAMMER DROP: 30 in.

SAMPLE NO	SAM DEP	PLE TH	CORE RECVRY	BLOW COUNTS	SAMPLE/CORE DESCRIPTION
	FROM	TO			
10/7	0	10		Flume	Large stone and fill consisting of brick, cinder, and
					various sorted gravels and sand.
	10	20		Flume	Same as above.
	20	30		Flume	Same as above from 20-23 feet grading into a sand,
					fine with silt.
	30	40		Flume	Same as above.
10/8	40	50		Flume	Same as above.
	50	60		Flume	Sand, fine and medium with silt and some gravel.
	60	70		Flume	Same as above.
	70	80		Flume	Hit wood obstruction at 72'. Material is sand, fine
					to medium with gravel.
10/9	80	90		Flume	Hit cobbles and boulders at 83'-86'.
	90	97		Flume	Same as above.
	97	99	0.75	24-13-	Sand, fine to coarse, gray (30%), gravel (30%),
				14-25	pebbles and broken rock chips (20%), silt and
					clay (20%).
	100	110			Hit Boulders at 101'-102', 107'-108'. Same as above
	110	116			In boulders. Same as above. Drills like till.
					Refusal.
•					



Land Surface

# WELL CONSTRUCTION LOG

6" Dia. protect	ive	
sleeve	Project Kirkland & Ellis NO	0896WG1 Well <u>GM-57C</u>
LAND SURFACE	Town/City Sauget	
	County St. Clair	State Illinois
8inch dia	Permit No	
drilled hole	Land-Surface Elevation	
MAN WALL ADDITION	and Datum feet	□ surveyed
Well casing,  4 inch dian	neter,	□ estimated
Steel	Installation Dates(s) 10/9	/87
Backfill	Drilling Method Hydraulic	(mud) Rotary
Grout	Drilling Contractor John Mathe	es & Associates, Inc.
	Drilling Fluid Polymer Free Be	entonite and Hydrant Water
81 ft*		
Bentonite   Sluri	•	• •
87 ft <sup>™</sup> pelle	Surging with compresse	ed air
	10/13/87	
<u>96</u> n·	Fluid Loss During Drilling	500 gallons
		nt ~1.000 gallons
Well Screen.  4 inch diamete	er l	feet below M.P
Stainless 20 Steel  Stainless 20 Steel  Steel  Sand Pack  Formation  Collapse	slot Pumping Depth to Water	feet below M.P
o tee!	Pumping Duration	
☐ Gravel Pack 5. ☐ Sand Pack		Date
☑ Formation	Specific Capacity	•
Collapse	Well Purpose	
116 ft*		
116 ft*	Remarks Ground water monit	toring in the "deep" zone.
•	nemarks	tering in the deep zone.
Measuring Point is Top of Well Casing Unless Otherwise		
Noted.		· · · · · · · · · · · · · · · · · · ·
*Depth Below		

Prepared by Brian A. Blum

BORING/WELL: GM-58A	PROJECT NO: NO308SG3	PAGE: 1
SITE Monsanto Compan LOCATION: Sauget, Illinoi	y DRILLING STARTED: 10/7/87	DRILLING COMPLETED: 10/7/87
TOTAL DEPIH HOLE DRILLED: 39 ft DIAME	TYPE OF S CORING DI	SAMPLE/ Split Spoon EVICE: Core Barrel
LENGTH & DIAMETER OF CORING DEVICE: 2' x 2"	SAMPLING INTERVAL: 5 ft	
LAND-SURFACE ELEVATION:	SURVEYED STIMATED DATUM:	
DRILLING FLUID USED: None	DRILLING METHO	D: Hollow Stem Auger
DRILLING CONTRACTOR: John Mathes &	Assoc. DRILLER: Kent	HELPER: Quentin
PREPARED BY: B. Blum	HAMMER WEIGHT: 140 lb	HAMMER DROP: 30 in.

SAMPLE NO	AMPLE SAMPI NO DEPIH	SAMPLE DEPTH F	CORE RECVRY O	BLOW COUNTS	SAMPLE/CORE DESCRIPTION
	FROM	TO			
	5	7	2.0	2-3-	Silt, light brown, dry.
				3-4	
	10	12	2.0	4-9-	Sand, fine, light brown with 20-25 percent silt.
				17-26	
	15	17	2.0	4-4-	Same as above.
				5 <b>-</b> 6	
	20	22	2.0	5 <del>-6-</del>	Same as above, wet.
				9-12	
	25	27	2.0	2-6-	Same as above with 10-15 percent silt.
				11-14	
	30	32	2.0	3-5-	Sand, fine, brown with 50 percent silt.
				7-9	
	35	37	2.0	3-6-	Sand, fine to medium with 5 percent silt.
				9-12	
•					



4" Dia. protective sieeve LAND SURFACE \_\_ inch diameter drilled hole Well casing, 2\_\_\_inch diameter, Steel ☐ Backfill ☑ Grout 16 ft• Bentonite ☐ slurry X pellets \_17 ft\* 19.4 ft -Well Screen. 2\_ inch diameter Stainless 10 slot Steel ✓ Gravel Pack -□ Sand Pack ☐ Formation Collapse 39.4 ft. 40\_ft\*

Measuring Point is Top of Well Casing Unless Otherwise Noted.

\*Depth Below Land Surface

Project Monsanto/N0808SG3	_ Well	GM-58A
Town/City Sauget		
County St. Clair	_State	Illinois
Permit No	•	
Land-Surface Elevation		
and Datumfeet	□ surve	eyed
	☐ estim	ated
Installation Dates(s)10/7/87		
Drilling Method Hollow Stem Auger		
Drilling Contractor John Mathes & Asse	ociates	, Inc.
Drilling FluidNone		·
Development Techniques(s) and Date(s) Surging with compressed air		
10/15/87		
		<del></del>
Fluid Loss During Drilling		gallons
Water Removed During Development1		
Static Depth to Water20		•
Pumping Depth to Water		
Pumping Duration hours		
Yield 1-2gpm		Date
<del>y.</del>		
Specific Capacity gon	n/ft	
Specific Capacity gpn Well Purpose Ground water monitor		the "shallow"
Well Purpose Ground water monitor	ing in	the "shallow"
	ing in	the "shallow"
Well Purpose Ground water monitor zone.	ing in	the "shallow"
Well Purpose Ground water monitor	ing in	the "shallow"
Well Purpose Ground water monitor zone.	ing in	the "shallow"
Well Purpose Ground water monitor zone.	ing in	the "shallow"
Well Purpose Ground water monitor zone.	ing in	the "shallow"
Well Purpose Ground water monitor zone.	ing in	the "shallow"
Well Purpose Ground water monitor zone.	ing in	the "shallow"

Brian A. Blum

Prepared by \_

BORING/WELL: GM-59A PROJECT	NO: NO308SG3	PAGE: 1
SITE Monsanto Company LOCATION: Sauget, Illinois	DRILLING STARTED: 10/8/87	DRILLING COMPLETED: 10/8/87
TOTAL DEPTH HOLE DRILLED: 39 ft DIAMETER: 8 in	TYPE OF S CORING DE	SAMPLE/ Split Spoon VICE: Core Barrel
IENGIH & DIAMETER OF CORING DEVICE: 2' x 2"	SAMPLING INTERVAL: 5 ft	
LAND-SURFACE ELEVATION:	SURVEYED PATUM:	
DRILLING FLUID USED: None	DRILLING METHOL	O: Hollow Stem Auger
DRILLING CONTRACTOR: John Mathes & Assoc.	DRILLER: Kent	HELPER: Quentin
PREPARED BY: B. Blum HAMMI	ER WEIGHT: 140 lb H	HAMMER DROP: 30 in.

SAMPLE NO	SAM DEP	PLE IH	E CORE RECVRY	BLOW COUNTS	SAMPLE/CORE DESCRIPTION
	FROM	TO	1		
	5	7	2	3-6-	Sand, very fine, tan; with lenses of silt, dry.
				9-14	
	10	12	2	4-8-	Silt, brown, dry.
				12-13	
	15	17	2	5 <del>-</del> 6-	Sand, very fine, tan; with lenses of silt.
				7-8	
	20	22	2	0-1-	Sand, fine, brown; with 10-15 percent silt, moist.
				2-4	
	25	27	2	1-2-	Sand, fine, brown; well sorted with a lens of silt.
				8-11	_
	30	32	2	2-3-	Same as above.
				12-15	
	35	37	2	2-3-	Sand, fine, brown; with 10 to 15 percent silt.
				9-13	
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